Analysis of Rose Oil by GC-MS and GC-MS/MS

Method 1:

Column: Zebron™ ZB-XLB, GC Cap. Column 30 m x 0.25 mm x 0.25 µm

Oven Profile: 50°C to 340°C @ 10°C/min for 10 min

Carrier Gas: Constant Flow Helium, 1.2 mL/min

Injection: Split 25:1, 1 µL @ 250°C

Detection: Mass Selective (MSD) (230°C) (Ctrl + Click to follow link)

Sample Preparation Note: Sample is 1% Rose oil in ethyl acetate

Method 2:

Column: DB-5ms, 30M X 0.25mm X 0.25µm

Oven Profile: 50°C for 1 min., then 15°C/min to 305°C.

Carrier Gas: Constant Flow Helium, 1.2 mL/min

Injection: SPI 30°C for 0.15 min. then 150°C/min to 250°C and hold 15 min.

Transfer Line: 280°C

Sample Preparation Note: Rose oil sample (β-damascenone ~100 ppm) diluted in chloroform (0.1%).
Detection:

**Mass Selective (MSD) or Mass Spectrometer**  *(Ctrl + Click to follow link)*

- Mass Range: 40-300 u
- Sec./Scan: 1
- Multiplier Delay: 5 min.
- Threshold: 0
- Ion Trap Temperature: 220°C
- Mass Defect: 0
- Background Mass: 39 u

**MS/MS**  *(Ctrl + Click to follow link)*

- Parent ion: 190 u
- Range: 3 u
- Amplitude: 31 volts non-resonant
- RF level: 48 u

Capillary GC in combination with MS/MS detection can be used for the very specific determination of trace compounds in complex matrices. Due to the high specificity, MS/MS offers a much more accurate determination of β-damascenone in rose oil.

References: Frank David, Research Institute for Chromatography, Belgium; Carine De Clercq, KIH De Nayer, Belgium; Pat Sandra, Department of Organic Chemistry, University of Gent, Belgium